#4

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RAW SEQUENCE LISTING DATE: 03/13/2002
PATENT APPLICATION: **US/09/993,292A** TIME: 10:59:50

Input Set : **A:\UOFMD.007A.SEQLIST.TXT**
Output Set: **N:\CRF3\03132002\I993292A.raw**

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 4 <110> APPLICANT: James E. Galen
 5       University of Maryland
 7 <120> TITLE OF INVENTION: USE OF CLY A HEMOLYSIN FOR EXCRETION OF
 8       PROTEINS
10 <130> FILE REFERENCE: UOFMD.007A
12 <140> CURRENT APPLICATION NUMBER: 09/993,292A
13 <141> CURRENT FILING DATE: 2001-11-23
15 <150> PRIOR APPLICATION NUMBER: 60/252,516
16 <151> PRIOR FILING DATE: 2000-11-22
18 <160> NUMBER OF SEQ ID NOS: 19
20 <170> SOFTWARE: FastSEQ for Windows Version 4.0
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28 <223> OTHER INFORMATION: pSEC84 Expression Plasmid
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33 taaagttaat gatgatagcg ggagttattc tagttgcgag tgaaggtttt gttttgacat 180
34 tcagtgctgt caaatactta agaataagtt attgatttta accttgaatt attattgctt 240
35 gatgttaggt gcttatttcg ccattccgca ataatcttaa aaagttccct tgcatttaca 300
36 ttttgaaaca tctatagcga taaatgaaac atcttaaaag ttttagtatc atattcgtgt 360
37 tggattattc tgcatttttg gggagaatgg acttgccgac tgattaatga gggttaatca 420
38 gtatgcagtg gcataaaaaa gcaaataaag gcatataaca gatcgatctt aaacatccac 480
39 aggaggatgg gatccaaaat aaggaggaaa aaaaaatgac tagtattttt gcagaacaaa 540
40 ctgtagaggt agttaaaagc gcgatcgaaa ccgcagatgg ggcattagat ctttataaca 600
41 aatacctcga ccaggtcatc ccctggaaga cctttgatga aaccataaaa gagttaagcc 660
42 gttttaaaca ggagtactcg caggaagctt ctgttttagt tggtgatatt aaagttttgc 720
43 ttatggacag ccaggacaag tattttgaag cgacacaaac tgtttatgaa tggtgtggtg 780
44 tcgtgacgca attactctca gcgtatattt tactatttga tgaatataat gagaaaaaag 840
45 catcagccca gaaagacatt ctcattagga tattagatga tggtgtcaag aaactgaatg 900
46 aagcgcaaaa atctctcctg acaagttcac aaagtttcaa caacgcttcc ggaaaactgc 960
47 tggcattaga tagccagtta actaatgatt tttcggaaaa aagtagttat ttccagtcac 1020
48 aggtggatag aattcgtaag gaagcttatg ccggtgctgc agccggcata gtcgccggtc 1080
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51 tgaaacaagc gaataaagat atcgatgcgg caaaattgaa attagccact gaaatagcag 1260
52 caattgggga gataaaaacg gaaaccgaaa caaccagatt ctacgttgat tatgatgatt 1320
53 taatgctttc tttattaaaa ggagctgcaa agaaaatgat taacacctgt aatgaatacc 1380
54 aacaacgtca tggtaagaag acgcttttcg aggttcctga cgtcgctagc tgataaccta 1440
55 gggccagcaa aaggccagga accgtaaaaa ggccgcgttg ctggcgtttt tccataggct 1500
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 56 ccgcccccct gacgagcatc acaaaaatcg acgctcaagt cagaggtggc gaaacccgac 1560
 57 aggactataa agataccagg cgtttccccc tggaagctcc ctcgtgcgct ctcctgttcc 1620
 58 gaccctgccg cttaccggat acctgtccgc ctttctccct tcgggaagcg tggcgctttc 1680
 59 tcatagctca cgctgtaggt atctcagttc ggtgtaggtc gttcgctcca agctgggctg 1740
 60 tgtgcacgaa cccccgttc agcccgaccg ctgcgcctta tccggtaact atcgtcttga 1800
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 62 cagagcgagg tatgtaggcg gtgctacaga gttcttgaag tggtggccta actacggcta 1920
 63 cactagaagg acagtatttg gtatctgcgc tctgctgaag ccagttacct tcggaaaaag 1980
 64 agttggtagc tcttgatccg gcaaacaaac caccgctggt agcggtggtt tttttgtttg 2040
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 66 ggggtctgac gctcagtaga tctaaaacac taggcccaag agtttgtaga aacgcaaaaa 2160
 67 ggccatccgt caggatggcc ttctgcttaa tttgatgcct ggcagtttat ggcgggcgtc 2220
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105 ctcaagcgcc gggcacatca tagcccatat acctgcacgc tgaccacact cactttccct 4500
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107 gctgcctccc ggagtttgtc tcgagcactt ttgttacccg ccaaacaaaa cccaaaaaca 4620
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139 <212> TYPE: PRT
140 <213> ORGANISM: Salmonella Typhi
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145 Ile Glu Thr Ala Asp Gly Ala Leu Asp Leu Tyr Asn Lys Tyr Leu Asp
146 20 25 30
147 Gln Val Ile Pro Trp Lys Thr Phe Asp Glu Thr Ile Lys Glu Leu Ser
148 35 40 45
149 Arg Phe Lys Gln Glu Tyr Ser Gln Glu Ala Ser Val Leu Val Gly Asp
150 50 55 60
151 Ile Lys Val Leu Leu Met Asp Ser Gln Asp Lys Tyr Phe Glu Ala Thr
152 65 70 75 80
153 Gln Thr Val Tyr Glu Trp Cys Gly Val Val Thr Gln Leu Leu Ser Ala
154 85 90 95
155 Tyr Ile Leu Leu Phe Asp Glu Tyr Asn Glu Lys Lys Ala Ser Ala Gln

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158          115                 120                 125
159 Glu Ala Gln Lys Ser Leu Leu Thr Ser Ser Gln Ser Phe Asn Asn Ala
160      130                 135                 140
161 Ser Gly Lys Leu Leu Ala Leu Asp Ser Gln Leu Thr Asn Asp Phe Ser
162 145                 150                 155                 160
163 Glu Lys Ser Ser Tyr Phe Gln Ser Gln Val Asp Arg Ile Arg Lys Glu
164                 165                 170                 175
165 Ala Tyr Ala Gly Ala Ala Ala Gly Ile Val Ala Gly Pro Phe Gly Leu
166              180                 185                 190
167 Ile Ile Ser Tyr Ser Ile Ala Ala Gly Val Ile Glu Gly Lys Leu Ile
168          195                 200                 205
169 Pro Glu Leu Asn Asn Arg Leu Lys Thr Val Gln Asn Phe Phe Thr Ser
170      210                 215                 220
171 Leu Ser Ala Thr Val Lys Gln Ala Asn Lys Asp Ile Asp Ala Ala Lys
172 225                 230                 235                 240
173 Leu Lys Leu Ala Thr Glu Ile Ala Ala Ile Gly Glu Ile Lys Thr Glu
174                 245                 250                 255
175 Thr Glu Thr Thr Arg Phe Tyr Val Asp Tyr Asp Asp Leu Met Leu Ser
176              260                 265                 270
177 Leu Leu Lys Gly Ala Ala Lys Lys Met Ile Asn Thr Cys Asn Glu Tyr
178          275                 280                 285
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181 Ser
182 305
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198 <211> LENGTH: 101
199 <212> TYPE: DNA
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211 <212> TYPE: DNA
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215 <223> OTHER INFORMATION: Cloning primer
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222 <211> LENGTH: 69
223 <212> TYPE: DNA
224 <213> ORGANISM: Artificial Sequence
226 <220> FEATURE:
227 <223> OTHER INFORMATION: Cloning primer
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231 cgcaacgcg 69
233 <210> SEQ ID NO: 7
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251 <223> OTHER INFORMATION: Cloning primer
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257 <210> SEQ ID NO: 9
258 <211> LENGTH: 101
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262 <220> FEATURE:
263 <223> OTHER INFORMATION: Cloning primer
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267 ctagctcatg tttgacagct tatcatcgat aacctttaat g 101
269 <210> SEQ ID NO: 10
270 <211> LENGTH: 71
271 <212> TYPE: DNA
272 <213> ORGANISM: Artificial Sequence
274 <220> FEATURE:
275 <223> OTHER INFORMATION: Cloning primer
277 <400> SEQUENCE: 10
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279 tacacgccat g 71

VERIFICATION SUMMARY DATE: 03/13/2002
PATENT APPLICATION: **US/09/993,292A** TIME: 10:59:51

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